

## **COASTAL ZONE MANAGEMENT**

Our mission is to balance the impacts of human activity with the protection of coastal and marine resources. As a networked program, CZM was specifically established to work with other state agencies, federal agencies, local governments, academic institutions, nonprofit groups, and the general public to promote sound management of the Massachusetts coast.

### **The Aquatic Invasive Species Program (AISP) Internship**

This intern will assist CZM in implementing priority tasks highlighted in the Massachusetts Aquatic Invasive Species Management Plan. Specifically the intern will be responsible for the following:

1. Assist the AISP in monitoring efforts for marine invasive species at marinas and rocky shores across the Commonwealth.
2. Provide support to the Marine Invasive Monitoring and Information Collaborative including: assistance at citizen trainings and workshops for marine invasive species identification, education, and data management
3. Provide additional assistance such as literature review, species evaluations, and administrative tasks as needed.

The intern will primarily work in the field at monitoring stations and volunteer trainings (approx one day per week); the intern may also work from home as needed.

### **Goals and Outcomes of Internship**

The AISP intern will:

1. Be trained to identify marine invasive species and other flora and fauna of the Gulf of Maine
2. Gain real-world experience in invasive species ecology and management
3. Participate in an active monitoring program and gain field experience
4. Teach others about marine invasive species and identification
5. Gain data management and database experience

### **Desired Qualifications**

1. Upper level undergraduate (senior) or graduate student with a background in biology, environmental science, or ecology preferred
2. Computing experience, including familiarly with MS Office applications
3. Ability to work outside in inclement weather and rough terrain, and irregular hours at times
4. Must have valid drivers license and reliable transportation
5. Some familiarity with field work and marine species of the North Atlantic preferred

**Schedule:** 7.5 to 15 hours per week. Potential for longer workweeks during the summer.

**Dates of Service:** April 2008 through November 2008

## Massachusetts Bays Program Internship

1) Project Description:

*Massachusetts Bays Embayments/Estuaries Atlas*. This project will design a “living” atlas of the embayments and estuaries of the Massachusetts Bays region (Massachusetts and Cape Cod Bays) to serve as a framework for the development of a habitat classification scheme to be used in ecological condition assessments in partnership with EPA/Narragansett Lab. Initial characterization will involve watershed delineation, tabulation of land uses, estuarine circulation, and potential habitat classification. The development of a Mass Bays embayment atlas will assist in assembling information and tracking approved NEP indicators currently “in use” to be summarized in the next (2009) Massachusetts Bays *State of the Bays Report*.

2) Skills needed: (prefer graduate student)

Geospatial analytical skills

Working knowledge of GIS software (i.e. ArcMap)

Good communication skills

Prefer strong background in aquatic biology and general marine sciences.

3) Basic work plan with anticipated hours needed.

Work with CZM, MBP, and EPA /Narragansett staff to develop atlas on embayments and estuaries in the MBP region that include available habitat mapping advances and land use information. Revisit MBP reports on tidal prism analyses of flushing and eutrophication sensitivity analyses. Anticipated hours: 20 hrs/wk for July – and 3 weeks in Aug. (140 hours total).

4) Project goal and tasks:

**Goal:** Draft web-based “living” Massachusetts Bays Estuary/Embayment Atlas

**Tasks:**

- 1) Literature review of relevant MBP reports (2) and Tiered Aquatic Life Use Model (EPA Narragansett Summary) and CZM's habitat classification report
- 2) Delineate embayment/estuary watershed and subwatersheds
- 3) Delineate coastal zone buffer including most current land-use data
- 4) Integrate DEP surface water quality data and classification
- 5) If time permits, identify appropriate data layers for supporting developing TALU and habitat classification needs.

## **Massachusetts Board of Underwater Archaeological Resources (BUAR) Internships**

### **A - Site Nominations to National Register of Historic Places**

1. BUAR has undertaken a number of field projects. We now have sufficient information to nominate these sites to National Register of Historic Places.
2. Necessary skills include academic background in cultural resources management/historic preservation (history, archaeology, etc.) and related research and report writing; basic archaeology skills, but grad student preferred
3. Tasks include collating research, undertaking library research, possible field research (photos, measurements if needed), drafting responses for Nomination forms - hours as available, but would prefer at least 2 days/week
4. Completion of one or more draft nomination forms; intern learns employment skills useful to both regulators/reviewers and technical consultants

### **B - Submerged cultural resources Geodatabase**

1. BUAR is updating its various manual literature based site files into a geo-referenced inventory of identified submerged cultural resources including shipwrecks and other resources (i.e., maritime structures, Native American Sites, intact paleosols).
2. While a basic data entry project, it will require some historical research. Necessary skills include academic background in GIS, geography, cultural resources management/historic preservation (history, archaeology, etc.) and related historic research; basic historical and GIS data entry skills, undergrad or grad
3. Tasks include data entry and documentary historical research - hours as available, but would prefer at least 2 days/week
4. Goal is to make the site files available as a collection of GIS data-layers and associated attributes

### **C - Shoreline Heritage Identification Partnership Strategy (SHIPS) program**

1. BUAR created its SHIPS program to engage the general public in the casual identification of coastal/shoreline sites. In order to implement this program, BUAR needs to identify possible NGO partners and develop a training program for NGOs and interested volunteers as well as document sites.
2. Necessary skills include academic background in cultural resources management/historic preservation (history, archaeology, etc.) and related research and report writing; basic archaeology skills, but grad student preferred
3. Tasks include identifying and contacting NGOs, assisting in developing training program, and site survey (non-diving field work) - hours as available, but would prefer at least 3-5 days/week
4. Goal is to fully implement this program as an on-going mechanism for site discovery and reporting